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Early Sport Specialization: Shifting Societal Norms

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The percentage of obese children in America has tripled in the last 30 years and correlates with physical inactivity.[1] Both obesity and a lack of physical activity lead to serious adverse health outcomes.[2] Physical inactivity and inadequate physical activity are even more widespread among American high school students.[3] These alarming statistics suggest we need a model that provides universal access to and opportunities for all American youth to participate in healthy physical exercise, through both in-school and after-school programs. Organized sport is one such model.

The late Nelson Mandela understood sport as a key element of society:

> Sport has the power to change the world. It has the power to inspire. It has the power to unite people in a way that little else does. It speaks to youth in a language they understand. Sport can create hope where once there was only despair. It is more powerful than government in breaking down racial barriers.[4]

Indeed, sport is a critical component of human culture and civilization. For millions of years, human bodies and brains have coevolved to meet the physical and cognitive demands of the uniquely human subsistence strategy of hunting and gathering. Not only does sport serve as a reenactment of skills and physiology for which humans are uniquely adapted, but it may also lead to enhanced neurogenesis, neurobiological rewards such as upregulation of endocannabinoid signaling, and mitigation against mismatch diseases such as obesity, metabolic syndrome, and neurodegenerative disorders.[5]

In other words, humans need sport. Unfortunately, the last decade has witnessed a steady decline in youth sport participation,[3] and considerable inequality to sport access exists across our society.[6] We prioritize and celebrate individual performance over general and widespread athletic participation, with the result that most school children are relegated to the sidelines and have little opportunity to participate in organized sport.[6] For the select minority of youth who do participate in sport, is more sport better? Can there ever be too much sport for the individual? And if so, do we know how much is too much, and can it be measured? Emerging information tells us we may have reached that measurable tipping point in the phenomenon known as early sport specialization.

Sport specialization is intensive, year-round training in a single sport to the exclusion of other sports.[7] *Early sport specialization* generally refers to such year-round activity occurring before puberty. What has led to this concept, and is it truly counterproductive? Early sport specialization is thought to be the outcome of a clash of systems, policies, and structures that produces requirements incompatible with long-term athlete development.[8] *Long-term athlete development* is a progressive model of sport participation championed by Balyi et al[9] that focuses on a foundation of fun and general athleticism, only gradually leading to sport specialization once developmentally and age-appropriate talent and personal ambition are established. What are some elements of this clash of systems, policies, and structures? They include but are not limited to (1) stakeholder pressure (eg, national governing bodies or academies) for success on the public stage, (2) attempts at prepubertal talent identification and development, (3) early recruiting for collegiate sports, (4) parental pressure, (5) inadequate preparation of sport coaches, and (6) aggressive sport-marketing strategies.[8]

The results of this systems clash are not encouraging. It is later—rather than earlier—sport specialization that leads to successful peak performance as an adult.[8,10] Indeed, most Olympic athletes played multiple sports in their youth, and we have no data to support the possibility that early specialization leads to a greater likelihood of a collegiate scholarship or a career as a professional athlete.[11] But performance aside, are there deleterious health consequences of early sport specialization? We need much better data to answer this question. The sports medicine literature is increasingly addressing the health and medical risks of early sport specialization, but a causal relationship confirmed by large-scale longitudinal tracking has not been established.[6] Little to no systematic tracking of youth sport training has been performed by relevant national governing bodies or other youth sport organizations; most data are derived from smaller studies or consensus meetings.[12]

Even without definitive data, the emerging consensus is worrisome. Early sport specialization is linked to overuse injuries, burnout, depression, and sport dropout.[12–14] Alarming evidence has suggested that leaving organized sport at an early age may lead to a lifetime absence of organized sport and physical activity.[15] On these topics, the emerging consensus is sufficient to compel a radical reshaping of the model of American sport. A culture of unequal, nonuniversal access and poorly conceived early training may cause great harm to both the athlete and society.

The long-term athlete-development model has been incorporated into a thoughtful solution for societal change

by the United States Olympic Committee's American Development Model (ADM).[3] The ADM is the radical change we need. If followed, the ADM will allow American youth to use sport as a path toward active and healthy lifestyles and create opportunities for athletes to maximize their full potential. The 5 key principles outlined by the ADM[3] are

1. Universal access to create opportunity for all athletes,
2. Developmentally appropriate activities that emphasize motor and foundational skills,
3. Multisport or multiactivity participation,
4. A fun, engaging, and progressively challenging atmosphere, and
5. Quality coaching at all age levels

These principles are reflected in progressive, developmentally appropriate stages of sport participation, and all national governing bodies of American sport are signatories to the ADM. However, it will take time for the ADM to influence societal norms, and until those norms change, an undercurrent of pressure for early sport specialization will persist.

The athletic trainer (AT) is the foundation of any effort dedicated to ensuring the health and safety of our most sacred asset in sport: the athlete. Indeed, the National Collegiate Athletic Association[16] formally recognized the AT, in conjunction with the team physician, as the primary athletics health care providers who have unchallengeable, autonomous authority for medical decision making. The AT is ideally positioned to facilitate the pathway for all stakeholders in sport to understand and follow the ADM. By leveraging his or her unique position in sport, the AT can help ensure that (1) coaches, including strength and conditioning specialists, develop long-term strategies for athlete development; (2) parents realize that the health, safety, and excellence of their children are served most effectively by the best evidence- and consensus-based model available, the ADM; and (3) evidence- and consensus-based literature on long-term athlete development—including the ADM—is widely disseminated to key sport stakeholders. By leveraging the unique role of the AT to socialize the ADM, we are embracing the sacredness of the athlete in sport and society.

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